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FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

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| EXAMINER |
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AFSHAR, KAMRAN

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2617

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/528,097 | Applicant(s) KITAKADO, JUN | |
| | Examiner KAMRAN AFSHAR | Art Unit 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 5-12 and 17-25 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17 is/are allowed.
- 6) ☒ Claim(s) 1,3,5-8,11,12,18,21,23 and 25 is/are rejected.
- 7) ☒ Claim(s) 9,10,19,20,22 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>05/15/2008</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 07/31/2008 regarding the rejection under 35 USC 102(b) as being anticipated by Ozaki et al. (JP Patent Number 09-205390) have been fully considered but they are not persuasive. In further review, Examiner content that the cited reference reasonably meets the claimed limitation as rejected.

2. Applicant's arguments: "Ozaki discloses calculating a correlation value of reception signals of two antennas 1 and 2 in a space diversity antenna. See, for example, paragraph 0007 of Ozaki. On the contrary, the present invention measures the actual reception signal levels received by a plurality of antennas (#1, #2) respectively, and uses the measured levels for display. More specifically, the present invention is provided to reduce a difference in a reception signal level between a plurality of antennas before adaptive array processing, for improving the reception characteristics of the adaptive array processing. For that purpose, the present invention measures (or "determines", as recited in claim 1) the respective reception levels of a plurality of antennas."

3. The examiner's response: In ¶ [0005], Ozaki discloses i.e. **receiving level**, ¶ [0004], **received for two or more receiving antennas** ¶ [0005], ¶ [0007], ¶ [0008] and [0009], Ozaki et al. discloses a means for calculating the correlation values and also he discloses a display section, space control section, which is shown in figure 1, blocks 12 and 10 respectively. In paragraph 0009, Ozaki et al. clearly states, "antennas 1 and 2 are moved according to spacing data". This indicates that the location or antenna tilt is adjusted according to the correlation values and spacing data. Two or more antennas are used in wireless devices for space diversity and to combat multi-path in the system. Furthermore, in paragraph 0010, Ozaki et al. discloses "a correlation value is calculated for every spacing by making antenna spacing into a parameter". Based on this statement, it is clear that the correlation values are **calculated**

Art Unit: 2617

(or measured or determined or computed or controlled, etc.,) (emphases added) to adjust the antennas location or tilt. In paragraph 0009, Ozaki et al. also discloses a display section, which displays "report completion" which is interpreted to be the correlation values of the received signal. Moreover, Ozaki et al. discloses moving antennas according to spacing data which is interpreted to be manually adjust the correlation value in an adaptive array radio communication apparatus. Last but not the least, in ¶ [Claim1], Ozaki clearly discloses i.e. a correlation value count **means to compute (measure, determine, calculate etc.,)** , the mutual correlation value **of the input signal (or the received signal)** which makes spacing between the above-mentioned antennas a parameter, and is received for every antenna, The space diversity antenna installation configuration characterized by having a correlation value comparison means to choose the minimum correlation value from each computed this correlation value, and the control means which makes the above-mentioned antenna migration means control so that the above-mentioned correlation value serves as min. Further more, Examiner very kindly invites the Applicant to Asano (EP 0, 932, 319 A2, e.g. 111 of Fig. 6) only as supporting reference that (i.e. measuring the actual reception signal levels received by a plurality of antennas (#1, #2) respectively **is vigorously well known in the art.**

Applicant(s) are reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of the claim. The Examiner is not limited to Applicant's definition, which is not specifically set forth in the claims, *In re Tanaka et al.*, 193 USPQ 139, (CCPA) 1977. Therefore, the previous rejection is maintained.

4. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **to reduce a difference in a reception signal level between a plurality of antennas before adaptive array processing, for improving the reception characteristics of the adaptive array processing**) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3, 5-8, 11-12, 18, 21, 23, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ozaki et al. (JP Patent Number 09-205390).

With respect to claims 1, 5, Ozaki teaches digital signal processor configured (See Ozaki e.g. 10 of Fig. 3, ¶ [0009]) to execute a reception level display program (See Ozaki e.g. program of Fig. 2) stored in a memory (See Ozaki e.g. 13 of Fig. 3) for an adaptive array wireless terminal apparatus having a plurality of antennas (See Ozaki e.g. 1 and 2 in figure 1), causing the digital signal processor (See Ozaki e.g. 10 of Fig. 3, ¶ [0009]), when executing said program, to perform the steps of / or an adaptive array wireless terminal apparatus having a plurality of Antennas (See Ozaki e.g. 1 and 2 in figure 1), comprising: a determining unit configured to determine reception levels of signals of a plurality of streams received by respective ones of the plurality of antennas (See Ozaki e.g. 8 of Fig. 1, ¶ [0009]); a display unit configured to display the determined reception levels of signals of said plurality of streams (See Ozaki e.g. displaying report is interpreted to be displaying correlation values, 12 of Fig. 1, ¶ [0009]); and a reception level adjusting unit (See Ozaki e.g. 10 of Fig. 1) configured to be manually operated by a user for adjusting the reception levels of signals of the plurality of streams (See Ozaki e.g. Examiner takes: moving antennas according to spacing data is to be the adjustment means altered manually by a user) (See Ozaki e.g. ¶ [0009]).

With respect to claim 3, Ozaki teaches a method of displaying a reception level in an adaptive array wireless terminal apparatus having a plurality of antennas (See Ozaki e.g. 1 and 2 in figure 1)

Art Unit: 2617

comprising the steps of: determining reception levels of signals of a plurality of streams received by respective ones of the plurality of antennas (See Ozaki e.g. 8 of Fig. 1, ¶ [0009]); and displaying said determined reception levels of signals of the plurality of streams (See Ozaki e.g. displaying report is interpreted to be displaying magnitude level of the correlation values, ¶ [0009]).

Regarding claim 18, Ozaki teaches that at least one of the plurality of antennas is a movable antenna and at least another of the plurality of antennas (See Ozaki e.g. examiner takes for example antenna 1 is movable and antenna 2 non-movable, Fig. 3) is a non-movable antenna, and wherein the reception level adjusting unit is configured to adjust the reception levels of signals of the plurality of streams by adjusting a position of the movable antenna (See Ozaki e.g. user controls movement of the receiving antenna spacing, ¶ [0009]).

Regarding claim 6, Ozaki teaches a numerical value indicating a reception level of each of the signals of said plurality of streams is displayed (See Ozaki e.g. correlation count section and display section are interpreted to display correlation value as a numeric value, ¶ [0009]).

Regarding claim 7, Ozaki teaches a difference value between each of the reception levels of the signals of the plurality of streams is displayed (See Ozaki e.g. correlation count section and display section are interpreted to display correlation value as a difference value, ¶ [0009]).

Regarding claim 8, Ozaki teaches a degree of magnitude of a difference value between each of the reception levels of the signals of the plurality of streams is displayed (See Ozaki e.g. correlation count section and display section are interpreted to display correlation value as a degree of magnitude of a difference value, ¶ [0009]).

Regarding claim 11, Ozaki teaches automatically activating the determining (See Ozaki e.g. actuating is performed without user intervention, ¶ [0009]) step and the display step (See Ozaki e.g. displaying report is interpreted to be displaying correlation values, 12 of Fig. 1, ¶ [0009]).

Regarding claim 12, it is obvious that activating the determining step and the display (See Ozaki e.g. displaying report is interpreted to be displaying correlation values, 12 of Fig. 1, ¶ [0009]) step in response to a user instruction (See Ozaki e.g. user controls movement of the receiving antenna spacing, ¶ [0009]).

Art Unit: 2617

Regarding claims 21, 23, 25, Ozaki teaches determines the reception levels of signals of a plurality of streams received by respective ones of the plurality of antennas (See Ozaki e.g. 1 and 2 in figure 1), prior to any adaptive array processing being performed (See Ozaki e.g. 8 of Fig. 1, ¶ [0009]) on the signals of the plurality of streams (See Ozaki e.g. 1 and 2 in figure 1).

Allowable Subject Matter

7. Claim 17 is allowed.

The following is an examiner's statement of reasons for allowance: 17.

Regarding claim 17, the prior art of record fails to disclose singly or in combination or render obvious that wherein the displaying step comprises: turning on a light emitting unit on a display without any flickering when differences between the determined reception levels of signals of the plurality of streams are all within a first difference value; turning on the light emitting unit on the display with a flickering rate greater than zero but less than a predetermined flickering rate, when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the first difference value but less than a second difference value that is greater than the first difference value; and turning on the light emitting unit on the display with a flickering rate greater than the predetermined flickering rate, when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the second difference value.

8. Claims 9-10, 19-20, 22 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 9, the prior art of record fails to disclose singly or in combination or render obvious that in the display step, any of the numerical value indicative of the reception level of each of the signals of the plurality of streams, the difference value between each of the reception levels and the degree of magnitude of the difference value is selectively displayed as display contents; the

Art Unit: 2617

program causing the digital signal processor to further perform the step of determining the contents to be displayed in the display step, in accordance with prior designation by a user.

Regarding claim 10, the prior art of record fails to disclose singly or in combination or render obvious that in the display step, any of the numerical value indicative of the reception level of each of the signals of the plurality of streams, the difference value between each of the reception levels and the degree of magnitude of the difference value is selectively displayed as display contents; the program causing the digital signal processor to further perform the step of periodically and successively switching the display contents to be displayed in the display step.

Regarding claim 19, the prior art of record fails to disclose singly or in combination or render obvious that the displaying unit comprises: a first light emitting unit outputting a first color; a second light emitting unit outputting a second color different from the first color; and a third light emitting unit outputting a third color different from the first and second colors; and a control unit configured to: turn on the first light emitting unit when differences between the determined reception levels of signals of all the plurality of streams are less than a first predetermined difference value; turn on the second light emitting unit when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the first predetermined difference value but less than a second predetermined difference value that is greater than the first predetermined difference value; and turn on the third light emitting unit when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the second predetermined difference value.

Regarding claim 20, the prior art of record fails to disclose singly or in combination or render obvious that the displaying unit comprises: a light emitting unit; and a control unit configured to: turn on the light emitting unit with no flickering when differences between the determined reception levels of signals of the plurality of streams are all less than a first predetermined difference value; turn on the light emitting unit with a flickering rate greater than zero and less than a first predetermined flickering rate when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the first predetermined difference value but less than a second predetermined

Art Unit: 2617

difference value that is greater than the first predetermined difference value, wherein the first predetermined flickering rate is greater than zero; and turn on the light emitting unit with a flickering rate greater than the first predetermined flickering rate when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the second predetermined difference value.

Regarding claim 22, the prior art of record fails to disclose singly or in combination or render obvious that the display step comprises: turning on a first light emitting unit on a display when differences between the determined reception levels of signals of the plurality of streams are all within a first difference value; turning on a second light emitting unit on the display, the second light emitting unit displaying a different color than the first light emitting unit, when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the first difference value but less than a second difference value that is greater than the first difference value; and turning on a third light emitting unit on the display, the third light emitting unit displaying a different color than the first and second first light emitting units, when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the second difference value.

Regarding claim 24, the prior art of record fails to disclose singly or in combination or render obvious that the display step comprises: turning on a first light emitting unit on a display when differences between the determined reception levels of signals of the plurality of streams are all less than a first predetermined difference value; turning on a second light emitting unit on the display, the second light emitting unit displaying a different color than the first light emitting unit, when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the first predetermined difference value but less than a second predetermined difference value that is greater than the first predetermined difference value; and turning on a third light emitting unit on the display, the third light emitting unit displaying a different color than the first and second first light emitting units, when the difference between the determined reception levels of signals of at least two of the plurality of streams is greater than the second predetermined difference value.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (571) 272-7796. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, **Eng, George** can be reached @ (571) 272-7495. The fax number for the organization where this application or proceeding is assigned is **571-273-8300** for all communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

Art Unit: 2617

more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Kamran Afshar/

Examiner, Art Unit 2617

/George Eng/

Supervisory Patent Examiner, Art Unit 2617